

## AMENDMENTS TO THE CLAIMS:

32. (currently amended) An article of manufacture comprising:  
a metallic substrate;  
a thermal barrier coating disposed on the metallic substrate;  
wherein the thermal barrier coating comprises a spinel material and an oxide material admixed to the spinel material, the oxide material selected from the group of  $\text{MgO}$ ,  $\text{ZrO}_2$ ,  $\text{HfO}_2$ ,  $\text{NiO}$ ,  $\text{CoO}$ ,  $\text{Al}_2\text{O}_3$  and  $\text{Cr}_2\text{O}_3$ .

33. (currently amended) The article of manufacture of claim 32, wherein the spinel material is selected from the group of  $\text{CoMg}_2\text{O}_4$ ,  $\text{CoFe}_2\text{O}_4$ ,  $\text{CoCr}_2\text{O}_4$ ,  $\text{CoTi}_2\text{O}_4$ ,  $\text{CoAl}_2\text{O}_4$ ,  $\text{NiMg}_2\text{O}_4$ ,  $\text{NiFe}_2\text{O}_4$ ,  $\text{NiTi}_2\text{O}_4$ ,  $\text{TiMg}_2\text{O}_4$ ,  $\text{TiFe}_2\text{O}_4$ ,  $\text{TiCr}_2\text{O}_4$ ,  $\text{TiTi}_2\text{O}_4$ , and  $\text{TiAl}_2\text{O}_4$ .

34. (previously added) The article of manufacture of claim 32, wherein a first portion of the thermal barrier coating comprises a normal spinel material and a second portion of the thermal barrier coating comprises an inverse spinel material.

35. (currently amended) An article of manufacture comprising:  
a metallic substrate;  
a thermal barrier coating disposed on the metallic substrate;  
wherein the thermal barrier coating comprises a spinel material selected from the group of  $\text{CoMg}_2\text{O}_4$ ,  $\text{CoFe}_2\text{O}_4$ ,  $\text{CoCr}_2\text{O}_4$ ,  $\text{CoTi}_2\text{O}_4$ ,  $\text{CoAl}_2\text{O}_4$ ,  $\text{NiMg}_2\text{O}_4$ ,  $\text{NiFe}_2\text{O}_4$ ,  $\text{NiTi}_2\text{O}_4$ ,  $\text{TiMg}_2\text{O}_4$ ,  $\text{TiFe}_2\text{O}_4$ ,  $\text{TiCr}_2\text{O}_4$ ,  $\text{TiTi}_2\text{O}_4$ , and  $\text{TiAl}_2\text{O}_4$ .

36. (currently amended) The article of manufacture of claim 35, further comprising an oxide material admixed to the spinel material, the oxide material selected from the group of  $\text{MgO}$ ,  $\text{ZrO}_2$ ,  $\text{HfO}_2$ ,  $\text{NiO}$ ,  $\text{CoO}$ ,  $\text{Al}_2\text{O}_3$  and  $\text{Cr}_2\text{O}_3$ .

37. (previously added) An article of manufacture comprising:  
a metallic substrate;  
a thermal barrier coating disposed on the metallic substrate;  
wherein a first portion of the thermal barrier coating comprises a normal spinel material and a second portion of the thermal barrier coating comprises an inverse spinel material.

38. (new) The article of manufacture of claim 32, wherein the spinel material is present as a mixture of the type  $AB_2X_4$ -AX- $B_2X_3$ .

39. (new) The article of manufacture of claim 35, wherein the spinel material is present as a mixture of the type  $AB_2X_4$ -AX- $B_2X_3$ .

40. (new) The article of manufacture of claim 37, wherein the thermal barrier coating comprises a spinel material present as a mixture of the type  $AB_2X_4$ -AX- $B_2X_3$ .